IN THE CLAIMS:

Please amend the Claims as follows:

1. (Currently amended) ~~A flexible~~ An imager for imaging a subject illuminated by incident radiation, said ~~flexible~~ imager comprising:

a ~~flexible~~ substrate comprising a polymer, wherein said substrate is about three (3) mils to about eight (8) mils in thickness;

a photosensor array disposed on said ~~flexible~~ substrate; and

a scintillator disposed so as to receive and absorb the incident radiation, configured to convert the incident radiation to optical photons, and optically coupled to said photosensor array,

wherein said photosensor array is configured to receive the optical photons and to generate an electrical signal corresponding to the optical photons.

2. (Cancelled)

3. (Currently amended) The ~~flexible~~ imager of Claim [[2]] 1, wherein said ~~flexible~~ substrate comprises ~~a flexible~~ an organic polymer.

4. (Currently amended) The ~~flexible~~ imager of Claim 3, wherein said ~~flexible~~ substrate comprises polyimide.

5-7. (Cancelled)

8. (Currently amended) ~~The flexible~~ An imager ~~of Claim 7~~, for imaging a subject illuminated by incident radiation, said imager comprising:

a substrate comprising a polymer;

a back surface layer disposed on a back surface of said substrate, wherein said back surface layer comprises a plurality of heating elements;

a photosensor array disposed on said substrate; and

a scintillator disposed so as to receive and absorb the incident radiation, configured to convert the incident radiation to optical photons, and optically coupled to said photosensor array,

wherein said photosensor array is configured to receive the optical photons and to generate an electrical signal corresponding to the optical photons.

9. (Currently amended) The ~~flexible~~ imager of Claim 1, wherein said photosensor array comprises a plurality of photosensors and an addressable thin film transistor (TFT) array comprising a plurality of TFTs,
wherein each of said TFTs is electrically coupled to a respective one of said photosensors so as to selectively address respective photosensors in said photosensor array,
wherein each of said TFTs comprises a gate electrode, a semiconductive region disposed over said gate electrode, and a source electrode and a drain electrode in contact with and disposed over said semiconductive region, and
wherein each of said semiconductive regions comprises a layer of intrinsic amorphous Silicon (a-Si) and a layer of doped amorphous Silicon disposed over said layer of intrinsic a-Si.

10. (Currently amended) The ~~flexible~~ imager of Claim 9, wherein said addressable TFT array is situated between said ~~flexible~~ substrate and said plurality of photosensors, wherein each of said photosensors comprises an amorphous-Silicon photodiode, and wherein said ~~flexible~~ imager further comprises:

a coating layer, disposed between said ~~flexible~~ substrate and said addressable TFT array; and

a cover layer disposed over said scintillator.

11. (Currently amended) The ~~flexible~~ imager of Claim 1, wherein said photosensor array comprises a plurality of photosensors and an addressable thin film transistor (TFT) array comprising a plurality of TFTs,

wherein each of said TFTs is electrically coupled to a respective one of said photosensors so as to selectively address respective photosensors in said photosensor array, and

wherein each of said TFTs comprises a gate electrode, a semiconductive region comprising an organic semiconductor and disposed over said gate electrode, and a source electrode and a drain electrode in contact with said semiconductive region.

12. (Currently amended) The ~~flexible~~ imager of Claim 11, wherein said semiconductive region is disposed over said source and drain electrodes, wherein said plurality of photosensors is situated between said ~~flexible~~ substrate and said addressable TFT array, wherein said TFTs are optically transparent, and wherein said ~~flexible~~ imager further comprises a cover layer disposed over said scintillator.

13. (Currently amended) The ~~flexible~~ imager of Claim 1, wherein said scintillator comprises cesium iodide.

14. (Currently amended) The ~~flexible~~ imager of Claim 1, wherein said scintillator comprises a phosphor screen.

15. (Currently amended) A ~~flexible~~ digital imager for imaging a subject illuminated by incident radiation, said ~~flexible~~ digital imager comprising:

a ~~flexible~~ substrate comprising an organic polymer and being about three (3) mils to about eight (8) mils in thickness;

a photosensor array disposed on said ~~flexible~~ substrate, said photosensor array comprising a plurality of photosensors and an addressable thin film transistor (TFT) array comprising a plurality of TFTs, said photosensors being arranged to form a plurality of columns and at least one row, and each of said TFTs being electrically coupled to a respective one of said photosensors so as to selectively address respective photosensors in said photosensor array; and

a scintillator disposed so as to receive and absorb the incident radiation, configured to convert the incident radiation to optical photons, and optically coupled to said photosensor array,

wherein said photosensor array is configured to receive the optical photons and to generate an electrical signal corresponding to the optical photons.

16. (Cancelled)

17. (Currently amended) The ~~flexible~~ digital imager of Claim 15, further comprising a back surface layer disposed on a back surface of said ~~flexible~~ substrate, said back surface layer comprising a plurality of heating elements.

18. (Currently amended) The ~~flexible~~ digital imager of Claim 15, wherein said photosensors are arranged to form one row.

19. (Currently amended) The ~~flexible~~ digital imager of Claim 15, wherein said photosensors are arranged to form a plurality of rows.

20. (Currently amended) The ~~flexible~~ digital imager of Claim 15, wherein each of said TFTs comprises a gate electrode, a semiconductive region disposed over said

gate electrode, and a source electrode and a drain electrode in contact with and disposed over said semiconductive region, and

wherein each of said semiconductive regions comprises a layer of intrinsic amorphous Silicon (a-Si) and a layer of doped amorphous Silicon disposed over said layer of intrinsic a-Si.

21. (Currently amended) The ~~flexible~~ digital imager of Claim 20, wherein said addressable TFT array is situated between said ~~flexible~~ substrate and said photosensors, each of which comprises an amorphous-Silicon photodiode, and wherein said ~~flexible~~ digital imager further comprises a coating layer, which is disposed between said ~~flexible~~ substrate and said addressable TFT array.

22. (Currently amended) The ~~flexible~~ digital imager of Claim 15, wherein each of said TFTs comprises a gate electrode, a semiconductive region comprising an organic semiconductor and disposed over said gate electrode, and a source electrode and a drain electrode in contact with said semiconductive region.

23. (Currently amended) The ~~flexible~~ digital imager of Claim 22, wherein said semiconductive region is disposed over said source and drain electrodes, wherein said plurality of photosensors is situated between said ~~flexible~~ substrate and said addressable TFT array, and wherein said TFTs are optically transparent.

24. (Currently amended) A digital imaging method for imaging a subject, said digital imaging method comprising:

conforming a ~~flexible~~ digital imager to the subject, the subject being positioned between the ~~flexible~~ digital imager and a radiation source;

activating the radiation source to expose the subject to radiation; and

collecting an image with the ~~flexible~~ digital imager.

25. (Currently amended) The digital imaging method of Claim 24, wherein the ~~flexible~~ digital imager comprises a plurality of photosensors arranged in a linear array.

26. (Currently amended) The digital imaging method of Claim 24, wherein the ~~flexible~~ digital imager comprises a plurality of photosensors arranged in a two dimensional (2D) array.

27. (Currently amended) The digital imaging method of Claim 24, wherein the radiation source comprises an x-ray source configured to expose the ~~flexible~~ digital imager to x-ray radiation.

28. (Currently amended) The digital imaging method of Claim 24, wherein the subject is a portion of an aircraft.

29. (Currently amended) The digital imaging method of Claim 28, wherein the subject is a fuselage, and wherein said conforming step comprises wrapping the ~~flexible~~ imager around at least a portion of the fuselage.

30. (Currently amended) The digital imaging method of Claim 28, wherein the subject is an aircraft wing, and wherein said conforming step comprises wrapping the ~~flexible~~ imager around at least a portion of the aircraft wing.

31. (Currently amended) A digital imaging method for imaging a subject using a radiation source configured to emit a diverging radiation beam, said digital imaging method comprising:

bending a ~~flexible~~ digital imager comprising a scintillator having a columnar structure to align the columnar structure parallel with the diverging radiation beam;

positioning the ~~flexible~~ digital imager such that the subject is between the radiation source and the flexible imager;

activating the radiation source to expose the subject to the diverging radiation beam; and

collecting an image with the ~~flexible~~ digital imager.

32. (Currently amended) The digital imaging method of Claim 31 further comprising adjusting a distance between the radiation source and the ~~flexible~~ digital imager to align the columnar structure of the scintillator with the diverging radiation beam.

33. (Currently amended) A digital imaging method for imaging a subject, said digital imaging method comprising:

embedding at least one ~~flexible~~ digital imager in the subject;

activating a radiation source to expose the subject to a diverging radiation beam, a portion of the subject being positioned between the radiation source and the ~~flexible~~ digital imager; and

collecting an image with the ~~flexible~~ digital imager.

34. (Original) The digital imaging method of Claim 33, wherein the subject comprises a section of an aircraft structure.

35. (Currently amended) The digital imaging method of Claim 34, wherein the subject comprises a fuselage, and wherein said embedding step comprises embedding the ~~flexible~~ digital imager between the fuselage and an insulation layer.

36. (Currently amended) The digital imaging method of Claim 34, wherein the subject comprises an aircraft wing, and wherein said embedding step comprises embedding the ~~flexible~~ digital imager within the aircraft wing.

37. (Original) The digital imaging method of Claim 33, wherein the subject comprises a section of a pipeline.

38. (Currently amended) The digital imaging method of Claim 33, wherein said embedding step comprises embedding a plurality of ~~flexible~~ digital imagers in the subject.

39. (Currently amended) A linear array computer tomography (CT) scanner for imaging a subject illuminated by incident radiation , said linear array CT scanner comprising:

a ~~flexible~~ substrate comprising a polymer;

a linear photosensor array disposed on said ~~flexible~~ substrate, said photosensor array comprising a plurality of photosensors arranged in a row and an addressable thin film transistor (TFT) array comprising a plurality of TFTs, each of said TFTs being electrically coupled to a respective one of said photosensors so as to selectively address respective photosensors in said linear photosensor array;

a scintillator disposed so as to receive and absorb the incident radiation, configured to convert the incident radiation to optical photons, and optically coupled to said linear photosensor array,

wherein said linear photosensor array is configured to receive the optical photons and to generate an electrical signal corresponding to the optical photons, and wherein each of said photosensors is oriented at a predetermined angle relative to an adjacent one of said photosensors, for alignment with the incident radiation, and wherein said substrate and said linear photosensor array are arranged in a fixed configuration.

40. (Cancelled)

41. The linear array CT scanner of Claim 39, wherein said linear photosensor array and said ~~flexible~~ substrate are configured to be adjustable for arranging each of said photosensors at a predetermined angle relative to an adjacent one of said photosensors.